

Adaptive Harvest Management (AHM) Task Force International Association of Fish & Wildlife Agencies (IAFWA)

Status Report #3 Strategic Guidance & Recommendations

June 29, 2004

Task Force Background

The AHM Task Force was established in December 2002 by the president of the IAFWA. The mission of the AHM Task Force is to foster understanding and support for continued strategic development and implementation of AHM. Task Force members are:

- \$ Wayne MacCallum, Atlantic Flyway (MA Division of Fish & Wildlife)
- \$ Roy Grimes, Mississippi Flyway (KY Dept. Fish & Wildlife Resources)
- \$ John Cooper, Central Flyway (SD Game, Fish & Parks Department)
- \$ Don Childress, Pacific Flyway (MT Fish, Wildlife & Parks)
- \$ Ken Babcock (Ducks Unlimited)
- \$ Rollie Sparrowe (Wildlife Management Institute, retired)
- \$ Ken Williams (U.S.G.S. Cooperative Research Units)
- \$ Ralph Morgenweck (U.S. Fish and Wildlife Service)
- \$ Dave Case, facilitator (D. J. Case & Associates)

Further information about the mission of the AHM Task Force, as well as its Status Reports, can be found at <http://migratorybirds.fws.gov/mgmt/ahm/taskforce/taskforce.htm> and at <http://www.iafwa.org/Attachments/IAFWA AHM TF Status Report 9-12-03.pdf>.

Development of Strategic Guidance for AHM

The Task Force emphasizes again that its focus is on policy issues (i.e., those involving social values), recognizing of course that any policy direction must be consistent with long-term conservation of waterfowl resources and with extant capabilities for science-based monitoring and assessment. In its first Status Report (September 2003) and at the AHM Conference (January 2004), the Task Force presented the waterfowl management community with a number of policy questions and challenges concerning the future direction of AHM for regulating duck hunting. In Status Report #2 (February 2004), the Task Force posed some more specific questions to the Flyway Councils, with the intent of using the Councils' responses to help formulate a set of strategic alternatives for the future direction of AHM. The responses from all four Flyway Councils are attached to this report.

The responses from the Flyway Councils, as well as input from the AHM Working Group and the U.S. Fish & Wildlife Service (Service), were considered in developing the strategic recommendations contained herein. The Task Force is continuing to seek input and feedback

from all interested parties, and is dedicated to developing as much consensus as possible on the issues at hand. Toward that end, the Task Force is proposing the following process for completing its work:

- \$ June 2004: Task Force distributes a set of strategic recommendations for Flyway Councils, their technical committees, and others for review (i.e., this report).
- \$ July: Flyway Councils and technical committees meet to discuss Task Force report. If possible, the Task Force would like to receive responses to its recommendations from the Flyway Councils by August 20, 2004.
- \$ September: AHM Task Force submits progress report at the IAFWA annual meeting in Atlantic City, NJ.
- \$ December: AHM Working Group meets and provides technical feedback on Task Force recommendations to Flyway Councils and the Service.
- \$ January 2005: AHM Task Force provides a more final set of recommendations to the waterfowl management community prior to the Service Regulations Committee meeting.
- \$ February/March: Task Force provides a (possibly final) report to IAFWA; Flyway Councils review and act on AHM Task Force recommendations.

Lessons from AHM

AHM has proven valuable for providing structure and focus to the debate over appropriate hunting regulations. The great advantage of AHM is that it provides an objective way to propose regulations in the face of professional disagreement about the effects of hunting and other factors on waterfowl abundance. Debate continues, but the focus has now largely turned from proposed hunting regulations to the subjective or value-based (i.e., policy) components of the decision-making process (e.g., harvest-management objectives). Addressing these kind of policy choices is always difficult, but even more so because *the AHM process is challenging traditional beliefs about our ability to understand and influence waterfowl population dynamics, and about the potential of science alone to engender policy consensus.*

The Task Force considers the following lessons from AHM to be particularly relevant to mapping a course for the future.

(1) Harvest-management objectives--It has become increasingly clear that maximizing the (sustainable) size of the waterfowl harvest is not the most important objective of harvest management. Most waterfowl managers seem more interested in maximizing hunter satisfaction and participation, recognizing that these are affected only in part by regulations and harvesting success. A recent report by the Wildlife Management Institute concluded that while hunting regulations can have a significant impact on short-term hunter participation, they may have only marginal effects on hunter satisfaction and long-term participation. The Task Force believes we should continue striving to better understand these relationships and how they might be applied in regulating harvests and in other facets of waterfowl conservation. In the short-term, however, the Task Force believes that harvest and population size continue to be appropriate performance measures for the AHM process. On the other hand, the existence of these dual, potentially

conflicting objectives (i.e., harvest and population size) leaves much room for discussion and debate.

(2) Accounting for sources of variation in waterfowl demographics--The history of waterfowl management has been characterized by persistent efforts to account for increasingly more spatial, temporal, and species-specific variability in waterfowl population dynamics. However, we question the wisdom of continuing this approach indefinitely, if only because of the strain it places on the limited resources available for monitoring and assessment activities. In addition, managers must recognize that the ability to optimize harvests of various waterfowl stocks depends: (a) on the capability to harvest selectively; (b) on some minimal understanding of each stock's dynamics; and (c) on knowledge of any interdependence in stock sizes. Managers currently face considerable challenges in meeting these criteria.

(3) Limits to system control--There are rather severe practical limits to the ability to predict, control, and evaluate regulatory impacts and, therefore, significant constraints on short-term harvest yields and the learning needed to increase long-term performance. These limits cannot be overcome completely, and the management community must somehow better balance expectations with reality in formulating regulatory strategies.

Key Policy Issues

In this section the Task Force provides some of its perspectives on three key policy issues regarding future directions in AHM. Specific recommendations are provided in the following section.

Harvest and Population Objectives

The maintenance of a viable waterfowl population is a necessary condition for maximizing long-term cumulative harvest. However, there is a tradeoff between the average size of the harvest and the average size of the population, and an objective to maximize long-term cumulative harvest may sometimes lead to population sizes that are low enough to be socially unacceptable. In these cases, an explicit population goal may be imposed to constrain the level of hunting opportunity.

The approach taken to date in AHM has been to consider a management objective that attributes relatively high value to harvest when North American Waterfowl Management Plan (NAWMP) population objectives are met, and a lower value to harvest as populations fall short of the NAWMP objectives. In the current AHM protocol, hunting regulations in the Mississippi, Central, and Pacific Flyways are based on the status of midcontinent mallards, using a harvest-management objective that proportionally reduces the value of (i.e., devalues) harvest (and therefore hunting opportunity) as the mallard population is expected to fall below the NAWMP objective. The resulting balance of harvest and population objectives results in a regulatory strategy that is more conservative than that for maximizing sustainable harvest, but more liberal than a strategy that completely sacrifices hunting opportunity if the NAWMP population objective is not met.

The Task Force recognizes that the NAWMP provides a convenient source of population objectives, but believes use of these objectives in AHM has been problematic because they:

- are tied to "average" (yet not explicitly defined) environmental conditions;
- are at least implicitly tied to the harvest regime of the 1970s;
- are not specified for all stocks of interest in harvest management; and
- reflect a presumed increase in the "carrying capacity" of the environment (i.e., the belief that NAWMP population objectives are generally not attainable under "average" environmental conditions without further improvement in habitat quality).

The Set of Regulatory Alternatives

The link between hunting regulations and resulting harvest rates is imperfect. Even repeated experience with particular regulatory alternatives has failed to eliminate the high degree of uncertainty regarding the extent to which realized harvest rates are commensurate with expectations. The implications of this uncertainty can be profound. Generally, less precision in the prediction of harvest rates leads to more conservative and more "knife-edge" harvest strategies.

In practice, the design of regulatory alternatives for AHM has been heavily influenced by tradition, where the historic motivations and rationale for regulatory choices often are either unknown or outdated. Therefore, there is a strong temptation to promote non-traditional regulatory alternatives that influence the amount and distribution of hunting opportunity in ways that are deemed more desirable. However, the AHM Working Group continues to express concerns about our ability to predict and evaluate the effects of such non-traditional regulations.

The Task Force reviewed a number of possible approaches to the modification of the current regulatory alternatives. Based on this review, the current alternatives were deemed unacceptable because: (1) they exhibit only minor differences in harvest rates (and thus foster "knife-edge" strategies); (2) they may be overly liberal for some species; and (3) they are expected to result in population sizes that may be unacceptably low from a social perspective. The Task Force is convinced that hunters would be supportive of more conservative seasons in exchange for more consistency, larger duck populations, and a feeling that they were not putting undue pressure on the birds. Therefore, it is the Task Force's belief that hunters would accept something less than maximum harvest opportunity if seasons were of reasonable length, with bag limits at or even slightly below recent levels.

The Task Force also notes the concern that has been expressed within the waterfowl management community about prescriptions for closed seasons arising from the AHM process. Prescriptions for closed seasons exist because the Service is obligated to explicitly consider a closed season, and because the current restrictive alternative is not sufficiently restrictive under some resource conditions (in other words, a closed season is the default prescription in the absence of a regulatory alternative that will produce harvest rates that are low enough). Most of the concern over closed seasons appears to have arisen because recent AHM prescriptions call for closed

seasons at some mallard population levels where hunting seasons have been open in the past (without apparent long-term adverse impact). Closed-season prescriptions are principally a result of the inclusion of the NAWMP population objective, and its effect on restricting hunting opportunity even at population levels only slight less than the NAWMP objective.

The Task Force considered a range of measures for addressing the concern over closed seasons, including the exclusion of closed seasons from consideration in the AHM process. However, the Task Force believes that a closed season must be explicitly considered for the following reasons:

- removing the most fundamental regulatory alternative from the analytical framework by which regulations are evaluated diminishes the role of AHM as a coherent information-based system for analyzing and selecting regulatory alternatives;
- removing the closed-season alternative might appear as if managers are arbitrarily eliminating alternatives for responsible management, by setting up a process where season closure is *de facto* no longer possible (even though it remains theoretically available to the Service); and
- removing the closed-season alternative potentially opens the Service to legal challenge, unless the Service is prepared to distance itself from AHM as a primary mechanism for regulations setting. The legal argument might be that if closure can only be selected outside AHM, and AHM is the primary information and decision framework for regulations setting, then closure becomes an alternative of lesser (rather than greater) importance (in contravention of the Migratory Bird Treaty Act).

Therefore, the Task Force believes that other approaches are necessary for addressing the concern about closed-season prescriptions. Fortunately, the Task Force believes that its recommendations, taken as a whole, will eliminate prescriptions for closed seasons for all but extremely low population levels.

Management of Multiple Duck Stocks

Since its inception, AHM has focused on the population dynamics and harvest potential of mallards, especially those breeding in midcontinent North America. Midcontinent mallards constitute a large portion of the total U.S duck harvest and traditionally have been a reliable indicator of the status of many other species. However, not all duck stocks (i.e., species and populations) have the same potential as midcontinent mallards to support harvest. Moreover, in recent years there has been a growing disparity between midcontinent mallards and some duck stocks in population status. As a consequence there is considerable interest in developing an AHM approach that explicitly recognizes and accounts for stock-specific variation in harvest potential. The challenge confronting duck-harvest managers is to decide what level of management resolution is appropriate given existing data-collection programs, acceptable regulatory mechanisms, the desires of hunters, legal mandates for species conservation, and the likely magnitude of spatial, temporal, and species-specific variability in duck harvest potential.

Variation in harvest potential among duck stocks means that the dual management goals of minimizing the potential for over-exploitation and maximizing hunting opportunity can be accomplished only to the extent that regulations are effective at directing harvest pressure among stocks in the appropriate manner. This in turn depends on an understanding of the patterns of variation in duck harvest potential, and on the willingness and ability of hunters to comply with stock-specific regulations. In those cases where stocks with different harvest potentials are exposed to a common set of regulations, we must be able to discern the effect of those regulations on the less productive stock(s), and ensure that any constraint on hunter opportunity is sufficient to prevent long-term resource depletion. Unfortunately, the capability of extant monitoring and assessment programs to predict and discern regulatory impacts is limited. Moreover, available evidence suggests that our ability to regulate harvests of stocks other than mallards is very limited, at least using traditional regulatory approaches.

The AHM Working Group recently considered a number of conceptual alternatives for multi-stock AHM. These alternatives were:

- continue the current approach based on mallards (midcontinent, eastern, and western stocks), but constrain the use of hunting regulations that would be expected to result in population levels of other species below their respective NAWMP goals; an important feature of this alternative is the option to have independent season or bag limits for stocks of special concern (e.g., pintails); or
- specify two groups of ducks based on relative differences in harvest potential, and then have independent regulations for the two groups; in contrast to the first alternative, there would be no independent seasons (i.e., all stocks eventually must be assigned to one of the two groups); or
- set a general duck season based on the stock(s) with the lowest harvest potential.

Recommendations

- 1) The Task Force believes that harvest and habitat management are inextricably linked, and the objectives of both AHM and the NAWMP should explicitly reflect that linkage (Runge et al. 2004; <http://migratorybirds.fws.gov/reports/ahm04/ReuniteNAPlanAHM.pdf>). However, the Task Force agrees with Runge et al. (2004) that population objectives of the NAWMP cannot be interpreted without the context provided by a specified harvest policy and by specification of “average” environmental conditions (e.g., precipitation). The Task Force therefore suggests that managers use the understanding of environmental and harvest dynamics of ducks derived from AHM and other research as a basis to help clarify the nature of the NAWMP population objectives. Certainly, the understanding of population dynamics will continue to evolve, and thus there needs to be an ongoing, joint AHM-NAWMP effort to periodically review population objectives. Ultimately, managers need to be clear about whether NAWMP population objectives represent the optimal level for maximizing harvest yield, a habitat carrying capacity, or something else.

- 2) In the short term, the AHM and the NAWMP communities need to become more aware of the deficiencies and ambiguities in current NAWMP population objectives. Until a satisfactory resolution of these issues is achieved, the Task Force believes it is advisable to temporarily de-couple the NAWMP population objective for mallards from AHM. As long as the NAWMP population objectives remain ambiguous, it will be difficult, if not impossible, to develop a strong, defensible rationale for how the NAWMP objective for mallards should influence harvest policy. However, the Task Force makes this recommendation contingent on the existence of suitable regulatory mechanisms for restricting the harvest of species that are unable to sustain the same level of harvest as mallards (this concern is addressed in other recommendations).
- 3) After considerable discussion, the Task Force has concluded that there should be some simplification of the current set of regulatory alternatives. However, any modification of regulatory alternatives now or in the future should reflect several important considerations:
 - a. The number of regulatory alternatives should be small to facilitate the identification of optimal choices, although the set of alternatives can be expanded or limited as the need and desire to do so is widely recognized. The Task Force recommends that the set of regulatory alternatives be reviewed no more often than every five years, perhaps coincident with the current review schedule for zone and split-season configurations.
 - b. Regulatory alternatives should be designed so that they result in relatively distinct ranges of harvest rates, and the same alternatives should be in place long enough to measure their effects.
 - c. Regulatory alternatives should reflect traditional Flyway differences, the preferences and skills of hunters, and law-enforcement capabilities.
- 4) The Task Force recommends the development of only two regulatory alternatives. These would include a “standard” or “traditional” season, which might be similar to the liberal alternative in use in 1995 and 1996 and which would be expected to be the optimal choice in most years. The other alternative would be “restrictive” regulations, which might be similar to the recent restrictive or very restrictive alternatives and which would be appropriate in times of below-average duck abundance.
- 5) The Task Force further recommends that the AHM Working Group investigate the expected performance characteristics of “standard” and “restrictive” alternatives, given a range of possible regulatory specifications (e.g., season length) and associated harvest rates. This analysis should then be used as a basis for developing final regulatory specifications for each alternative.
- 6) With respect to management of multiple stocks, the Task Force generally supports the first of the alternatives articulated by the AHM Working Group (with the exception of using NAWMP population objectives as a constraint on hunting opportunity). Thus, the Task

Force supports the effort of the Service to define three breeding populations of mallards, with regulations in each Flyway governed by their respective derivation of birds. This has never been attempted before, and it is not clear that extant monitoring and assessment capabilities can support this degree of spatial resolution. Therefore, the Task Force believes it is necessary to demonstrate the feasibility of this approach before considering further spatial resolution in harvest management.

- 7) The Task Force also recognizes that establishing general duck seasons based on the status of mallards will continue to present difficult challenges for managing the harvests of other stocks with lower harvest potential. Therefore, independent season lengths, bag limits, and framework dates should be considered for those stocks with relatively low harvest potential (e.g., canvasbacks) or for those stocks with small or declining population sizes (e.g., pintails). However, such regulations should be practicable and effective in light of extant monitoring programs, administrative burden, regulatory complexity, the ability of hunters to shoot selectively, and enforcement capabilities.

**Atlantic Flyway Response to
AHM Task Force Request for Input on the Future of AHM
March 2004**

The AHM Task Force requested flyway responses to the following questions:

A. What should be the goals and objectives of harvest management?

1. Should AHM:

- a. Explicitly recognize NAWMP goals in the development of regulatory strategies?*
NAWMP goals should be explicitly acknowledged and considered in the development of harvest strategies, but they should not be automatically included as triggers or thresholds for duck harvest strategies.
- b. If so, to what degree should hunting opportunity be constrained by the NAWMP goals?*
To a very limited degree, as noted above; they should not be automatically used as triggers or thresholds for duck harvest strategies..
- c. And, how should we account for those situations when uncontrollable environmental conditions (e.g., precipitation) are not “average?”*
Environmental conditions should be factored into harvest decisions, if they are an important factor in the harvest strategy (e.g., pond numbers are an input to AHM for mid-continent mallards). As long as NAWMP goals are not used as thresholds for harvest, there is no need to adjust the goals to account for variation in habitat conditions.

2. If not:

- a. Then how would we communicate the apparent disconnect between the two principal programs for waterfowl management?*
We should explain that harvest strategies are intended to provide sustainable recreational use of ducks given current habitat capacity and conditions, whereas NAWMP goals reflect the desired future capacity of habitat to produce ducks. Waterfowl managers involved in harvest management or NAWMP need to articulate a common message about the relationship of NAWMP goals to harvest opportunity. Ultimately, NAWMP goals should be based on a common biological basis (e.g., carrying capacity) that is less ambiguous than current goals seem to be.
- b. And how would we ensure that general duck-hunting regulations based on mallards are not overly liberal for some duck species or stocks?*
Eastern mallard models suggest that we could allow more liberal seasons than the current liberal alternative, but due to concerns about over-harvest of other stocks we have limited the general duck hunting regulations to be no more liberal than we have used in the past. In addition, we annually assess the status of other

stocks and recommend lower bag limits, seasons-within-seasons, or closed seasons, as needed. To further address this concern, we could consider setting the total duck limit to be the same as the mallard limit, so there is no incentive for hunters to take other species.

What should the set of regulatory alternatives look like?

1. What are the minimum season lengths, bag limits, and framework dates needed to ensure that states retain an interest in establishing open hunting seasons?
As little as 30 days with 3 ducks/day (the current restrictive package) would maintain some interest, and past experience suggests that there is no need to have a general duck season length of less than 30 days to adequately protect most duck stocks in the Atlantic Flyway. Framework dates should not be restricted to less than October 1 - January 20, to maintain season-setting flexibility.
2. *Are current Flyway differences in regulatory alternatives acceptable?*
Yes, but we would support a re-evaluation of the basis for those differences using current data on hunter numbers and harvest of important stocks in each flyway. Differences in regulatory alternatives among flyways are acceptable if they will help achieve harvest management objectives or hunter satisfaction.
3. *Are less complex regulations (e.g., fewer species restrictions within the total bag limit) desirable?*
Yes.
4. *Which is more preferred: infrequent, but large changes in annual regulations or more frequent, but smaller changes in annual regulations?*
We are not sure. Infrequent but large changes may make annual regulations more predictable, would improve our ability to learn how specific regulations packages affect populations, and may provide some administrative efficiency. However, we do not have reliable information on hunter preferences or acceptance of either scenario. We assume that hunters would prefer to not forego any opportunity that might be afforded by more frequent, smaller changes, but this is not certain. If hunter acceptance was similar for either approach, we would favor the more informative and efficient approach.
5. *Would aggregate bag limits (e.g., one hen mallard or one pintail) be an acceptable means to reduce harvest pressure on particular stocks?*
Yes, this is an acceptable approach in concept if shown to be an effective way to limit harvest of specific stocks of concern. We would like to give this concept further consideration and determine what species or stocks might be included in the Atlantic Flyway. We would also need to consider whether aggregate bag limits would be more difficult to evaluate than other means of reducing harvest.

6. *Would states be willing to give up days in the liberal alternative to foster annual stability in regulations, and to help ensure that there are no closures or partial-season closures on some species?*

Yes, many Atlantic Flyway states would accept a limited reduction in season length in the liberal alternative if it would provide those benefits. However, based on current eastern mallard models, having fewer days in the liberal alternative would not likely increase stability in our regulations since we expect to be in the liberal alternative nearly 100% of the time with 60-day seasons. (That could change if other stocks were incorporated into the decision making process in the future.) Also, a limited reduction in the liberal season length may not significantly reduce the need for full or partial closures, since far fewer days are often deemed allowable. However, some Atlantic Flyway states would favor a shorter liberal season (and/or a lower total duck bag limit) to reduce the potential for over-harvest of other stocks and perhaps to reduce the need for some species restrictions. Unfortunately, we do not have reliable hunter information on preferences or acceptance of restricting general duck hunting regulations to reduce the number of species-specific regulations (e.g., bag limits, seasons within seasons).

7. *How often should the regulatory alternatives be reviewed, and what should be the criteria for modifying them?*

The basic alternatives should be reviewed every 5 years, and changes made if there are compelling biological or social reasons for change. However, the regulatory choice and species-specific limits should be decided annually based on current status information.

C. How should AHM account for species other than mallards?

1. *Should we:*

- a. *Continue to base the choice of regulatory alternative on the status of mallards?*

Yes, the choice of regulatory alternative for the Atlantic Flyway should continue to be based on eastern mallards for the foreseeable future, while we continue to explore the potential for, and implications of, integrating other stocks (e.g., wood duck, black duck) into that decision.

- b. *If so, how should we account for those stocks with lower harvest potential?*

By setting appropriate bag limits, singly or in the aggregate, (including seasons within seasons, and allowing for regional differences) based on current population and harvest data and models, if available, once season length (based on mallards) is determined. Where possible, an AHM approach should be used to set limits for other stocks, e.g., black duck, wood duck, pintail, etc.

- c. *Or, would one of the other alternatives described by the AHM Working Group be more appropriate?*

None of the other alternatives suggested by the AHM Working Group (i.e., manage all species as two groups based on relative differences in harvest potential, or set a duck season based on stocks with the lowest harvest potential)

are acceptable or likely to be feasible in the foreseeable future (e.g. Least Common Denominator, Species Guilds).

2. *Regardless of the general approach, for which species (if any) would separate hunting regulations (including species-specific season lengths, bag limits, and framework dates) be acceptable?*

Species-specific bag limits are acceptable for almost any species, including those that currently have special limits, as long as hunters can reasonably be expected to comply and the special limits are biologically justified. However, reducing the number of species-specific bag limits would be desirable. Species-specific season lengths (e.g., including seasons within the regular duck season) and framework dates are less acceptable, and should only be used as a last resort. Species specific seasons should not be offered outside of the regular duck season, except as currently allowed for teal/wood duck and sea duck seasons.

3. *If the length of the general duck season were based on a single species like mallards, for which species (if any) would bag limits that varied annually be acceptable?*

Special bag limits are acceptable for almost any species that is relatively easy for hunters to avoid or identify on the wing (e.g., based on plumage, behavior, habitat, distribution, etc.). Such restrictions should not be adopted unless warranted by poor status and likelihood that restrictions will result in a measurable benefit to the stock. Annual changes in bag limits are more acceptable than annual changes in season length.

4. *For which species (if any) would periodic closed seasons be acceptable?*

Closed seasons on any duck species are undesirable, except as a last resort when a significant benefit can be shown. Closed seasons are acceptable only under circumstances noted in #3 above.

5. *Should further divisions within Flyways:*

- a. *Be considered at this time as a means to address geographic differences in harvest derivation or other regional issues?*

Yes, a Management Unit approach, allowing different regulatory alternatives among units, should be considered where there are significant and important regional differences in harvest composition and derivation. However, regulations in all areas of a flyway should continue to be decided by the entire flyway, as is currently done for Atlantic Flyway Canada geese.

- b. *If so, where?*

In the Atlantic Flyway, to reflect significant differences in harvest composition and derivation between northern and southern states, including the relative contribution of mid-continent stocks, as well as differences in hunter preferences and trends. We believe a Management Unit approach could further improve duck harvest management in the Atlantic Flyway, and we plan to prepare a review paper on this topic in the coming year.

MISSISSIPPI FLYWAY COUNCIL

Feedback to AHM Task Force

A. 16 March 2004

1. Should AHM:

a. Explicitly recognize NAWMP goals in the development of regulatory strategies?

Yes, but only for mallards. Other species goals are not applicable at this time since the current AHM process deals only with mallards. If and when the AHM process can incorporate other species, NAWMP goals for those species should be considered and should be re-evaluated for mallards as well. We recognize that inclusion of the NAWMP goal for mallards is a more conservative regulatory strategy than managing for maximum sustainable yield.

b. If so, to what degree should hunting opportunity be constrained by the NAWMP goals?

It should be constrained as it is currently while exploring the potential of establishing a curvilinear relationship that places a higher value on hunting at population levels closer to goal.

c. And, how should we account for those situations when uncontrollable environmental conditions (e.g., precipitation) are not average?

The AHM models already account for variable pond numbers.

2. If not:

a. Then how would we communicate the apparent disconnect between the two principal programs for waterfowl management?

b. And how would we ensure that general duck-hunting regulations based on mallards are not overly liberal for some duck species or stocks?

3. What are the minimum season lengths, bag limits, and framework dates needed to ensure that states retain an interest in establishing open hunting seasons?

We favor the current restrictive package. If faced with the prospect of a closed season, we would consider something less than the current restrictive package.

4. Are current Flyway differences in regulatory alternatives acceptable?

No. We should evaluate these differences based on current harvest and hunter numbers.

5. Are less complex regulations (e.g., fewer species restrictions within the total bag limit) desirable?

Yes. However, simplicity can create a loss of hunting opportunity. For example, a bag limit of 3 ducks would prevent most species from being over-harvested, but would limit the harvest of species that were relatively abundant and could sustain the additional harvest.

6. Which is more preferred: infrequent, but large changes in annual regulations or more frequent, but smaller changes in annual regulations?

We prefer more frequent but smaller changes for social reasons, and continue to support the 1-step constraint. Additionally, infrequent but larger changes improve our ability to learn how regulations packages impact populations.

7. Would aggregate bag limits (e.g., one hen mallard or one pintail) be an acceptable means to reduce harvest pressure on particular stocks?

Aggregate bag limits are worth exploring.

8. Would states be willing to give up days in the liberal alternative to foster annual stability in regulations, and to help ensure that there are no closures or partial season closures on some species?

Yes, depending on the extent of the trade-offs.

9. How often should the regulatory alternatives be reviewed, and what should be the criteria for modifying them?

Regulatory alternatives should be reviewed no more often than every 5 years, unless there are compelling biological or social reasons for changes to the packages prior to the end of the 5-year period.

10. Should we:

a. Continue to base the choice of regulatory alternative on the status of mallards?

Yes.

b. If so, how should we account for those stocks with lower harvest potential?

Restrictive bag limits (possibly including aggregate bag limits), seasons within seasons, and season closures.

c. Or, would one of the other alternatives described by the AHM Working Group be more appropriate?

No.

11. Regardless of the general approach, for which species (if any) would separate hunting regulations (including species-specific season lengths, bag limits, and framework dates) be acceptable?

For any species for which there are concerns about potential over-harvest.

12. If the length of the general duck season were based on a single species, like mallards, for which species (if any) would bag limits that varied annually be acceptable?

For any species for which there are concerns about potential over-harvest.

13. For which species (if any) would periodic closed seasons be acceptable?

Preferably none. Closed seasons should only be used as a last resort to prevent over-harvest.

14. Should further divisions within Flyways:

a. Be considered at this time as a means to address geographic differences in harvest derivation or other regional issues?

Such divisions could be considered if there are strong biological or sociological justifications for doing so.

b. If so, where?

Where it would improve population or stock management, for example black ducks, Great Lakes mallards, and wood ducks.

Central Flyway Council Response to the Adaptive Harvest Management (AHM) Task Force Status Report #2

The Central Flyway Council has reviewed the following Adaptive Harvest Management Task Force Questionnaire. This exercise elicited much debate and illustrated that AHM is a viable tool, but there are still many questions that need to be answered and work yet to be done.

Although we recognize that our response needs to be provided now, we still maintain that the Council needs to have an opportunity to further discuss this matter in order to provide the best information for our Flyway and assist the Task Force with its charge of making AHM a better tool for management of our shared waterfowl resource. As a result, it is our intent to make AHM and the Task Force Status Report a focus for our summer meeting.

The following responses are attempts to point out the Central Flyways views and do not always indicate a consensus on the issues. We hope that we are not causing confusion, but rather identifying points that need to be addressed more carefully in your upcoming deliberations.

A. What should be the goals and objectives of harvest management?

1. Should AHM:

a. Explicitly recognize NAWMP goals in the development of regulatory strategies?

Yes-4

No-6

The Central Flyway recognizes that the NAWMP goals were established as habitat goals and not for regulatory strategies. However, through time, the two have become linked. The basic premises for decoupling the two is to minimize the time spent in the closed portion of AHM and afford more opportunity for mallard harvest. For those states that wish to continue to recognize NAWMP goals for regulatory strategies, the primary reason was concern for longer mallard seasons and the impact on other species that may not be able to withstand longer season lengths (e.g. pintails, canvasback, mottled ducks). Although the majority of CF states responded positively to decoupling the AHM from NAWMP goals, we recognize the inherent communication problems that would result. For those that believe that we should recognize the NAWMP goals, it should be for mallards only. Other species goals are not applicable at this time since the current AHM process deals only with mallards. If and when the AHM process can incorporate other species; NAWMP goals for those species should be considered and should be re-evaluated for mallards as well.

b. If so, to what degree should hunting opportunity be constrained by the NAWMP goals?

States that recognized continuing with the NAWMP goals as a regulatory strategy identified maintaining the current practice with respect to harvest. If changes to the current method were made then we should use a curvilinear or scaled relationship with higher value on hunting at populations levels closer to their NAWMP goals.

- c. *And, how should we account for those situations when uncontrollable environmental conditions (e.g., precipitation) are not “average?”*

We should account for uncontrollable situations in the same fashion as we currently are or scale changes to reflect conditions on the breeding grounds. Dealing with the “exception” is what professional waterfowl managers get paid to do based on our collective years of experience and management savvy; however, we should not let the potential for an exception determine the rules.

2. *If not:*

- a. *Then how would we communicate the apparent disconnect between the two principal programs for waterfowl management?*

Recognizing that decoupling AHM from the NAWMP will create a tremendous communication problem; we suggest the AHM and NAWMP working groups spearhead the communication effort. The current climate among duck hunters indicate that they believe that liberal regulations are a product of paper ducks and are not reflective of current trends in duck numbers. Changes such as removing the NAWMP goal could result in liberal seasons more often and potentially reduce the credibility of the process in the minds of hunters. To ensure the support of the “average” duck hunter will require a well thought out and properly executed campaign, the cost of which may not be worth decoupling, especially if the NAWMP Committee is already looking at adjusting their population goals. It would seem that adjusting the Plan goals should first be finalized before determining how to deal with AHM goals to avoid further confusing this overall issue that may “kill” all our credibility.

- b. *And how would we ensure that general duck-hunting regulations based on mallards are not overly liberal for some duck species or stocks?*

The use of bag limits are the current standard to ensure that liberal regulations based on mallards do not adversely impact other duck species or stocks. However, the Central Flyway has developed and submitted an alternative for consideration by the Service. The “Hunter’s Choice” or aggregate bag is potentially an option to consider in the near future to address duck populations that may not be able to withstand harvest regulations based on mallards.

B. What should the set of regulatory alternatives look like?

3. *What are the minimum season lengths, bag limits, and framework dates needed to ensure that states retain an interest in establishing open hunting seasons?*

Season length: Responses ranged from 20-51 days with an average of 35.6 and a median of 39

Bag limit: Range from 2-4 and an average of 3. A bag limit of 3 was the preference by 8 states.

There was considerable debate with this question particularly with the words “retain an interest”. No one was interested in packages that call for a closed season. This is the ultimate in hunters “losing interest” so a season of any length would maintain “interest” by some hunters. However,

if the intent is to keep hunter numbers at viable levels then recent history suggest that a 39 day 3 bird bag is probably the minimal season that is acceptable to the majority of “average” duck hunters. Anything less will maintain some hunters, but we have no recent history to adequately measure what level. The CFC generally supports having two packages, one with 39-days and 3 or 4 ducks, and the other being longer, somewhere from 60 to 74 days and the Hunter’s Choice bag of five total ducks. We realize that we do not have the same kind of duck hunter we had when seasons were severely restricted in the 1960’s, and providing options that maintain a core level of interest is an issue worth spending some research effort to determine the breaking point in “core” support among duck hunters. If you apply the current level of AHM knowledge to the same databases we had during the severely restricted seasons of the 1960’s, it is doubtful that the seasons would have had to have been that restricted back then, even with twice the duck hunters of today. It is not reasonable to address how restricted we might have to go until we are actually faced with these conditions, then base the decision on what we know at that time.

Framework dates: October 1 – January 20 was the most selected with one closing as early as December 31.

4. *Are current Flyway differences in regulatory alternatives acceptable?*

Yes-6

No-4

The Central Flyway is fairly evenly split on the Flyway difference. Those that do not agree believe that regulations for each Flyway or management unit should reflect the characteristics of duck recruitment (biology) and the harvest pressure that will be brought to bear. However, AHM packages should be consistent across all flyways with respect to package selected (not liberal in one flyway and restrictive in another). Prescriptive options within the flyway, based on sound biology and harvest apportionment within the flyway will create a high level of debate based on north to south variances in the options

5. *Are less complex regulations (e.g., fewer species restrictions within the total bag limit) desirable?*

There was a consensus of the Central Flyway that less complex regulations are preferred with all 10 states agreeing.

6. *Which is more preferred: infrequent, but large changes in annual regulations or more frequent, but smaller changes in annual regulations?*

Seven of the 10 Central Flyway states support infrequent, but large changes in annual regulations.

7. *Would aggregate bag limits (e.g., one hen mallard or one pintail) be an acceptable means to reduce harvest pressure on particular stocks?*

The Central Flyway supports an aggregate bag as a means to reduce harvest pressure on particular stocks of ducks and has forwarded our proposal to the Service for consideration.

8. *Would states be willing to give up days in the liberal alternative to foster annual stability in regulations, and to help ensure that there are no closures or partial-season closures on some species?*

The Central Flyway has no clear position on this question. Three states were not willing to give up days to maintain annual stability. The remainder of the states might agree conceptually, but the tradeoff would have to be reviewed prior to acceptance of any proposal. It was suggested that no more than one-week may be a viable consideration.

9. *How often should the regulatory alternatives be reviewed, and what should be the criteria for modifying them?*

The majority of the Central Flyway (9 states) felt that alternatives should be reviewed every 5 years with one state suggesting every 4 years. Criteria for modifications include changes in population changes, consensus and any new information that may become available.

C. How should AHM account for species other than mallards?

The Central Flyway Council continues to support the AHM approach for setting duck hunting regulations based on the status of mid-continent mallards. The Council recognizes that seasons set based on the status of mallards may result in unacceptably high harvests of some duck species. Seasons-within-seasons may be effective in limiting harvest for these and other duck species. However, the Council believes that seasons-within-seasons are unacceptably burdensome to duck hunters, particularly as this approach is used for more species. Thus, the Council has a strong interest in developing regulatory alternatives that limit harvest on species with relatively low harvest potential, but that avoid closed seasons or seasons-within-seasons. Specifically, we believe that use of aggregate bag limits may be as effective at reducing harvest of target species as seasons-within-seasons. Recognizing that the actual effectiveness (harvest impacts, hunter preference) of this approach is unknown, the Central Flyway would like to evaluate the proposed approach during an experimental period. This is the Central Flyway recommendation for an initial approach to resolving the questions in Part C.

10. *Should we:*

- a. *Continue to base the choice of regulatory alternative on the status of mallards?*

All states agreed that regulatory options should be based on the status of mallards.

- b. *If so, how should we account for those stocks with lower harvest potential?*

Bag restrictions are the best method to address populations with lower harvest potential and we believe that the aggregate bag (Hunter's Choice) should be a top consideration.

- c. *Or, would one of the other alternatives described by the AHM Working Group be more appropriate?*

Based on the previous questions, the Central Flyway does not endorse other alternatives described by the AHM Working group at this time.

11. Regardless of the general approach, for which species (if any) would separate hunting regulations (including species-specific season lengths, bag limits, and framework dates) be acceptable?

Bag limit variations are an acceptable option for any species that require additional protection. Canvasback was the species mentioned most often. Other options are not the preferred alternative at this time.

12. If the length of the general duck season were based on a single species like mallards, for which species (if any) would bag limits that varied annually be acceptable?

Most of the CFC states stated that any species of concern could be included in this, but we should maintain it to as few as possible. Species mentioned specifically were canvasbacks, pintails and scaup. One state indicated that species should have annual variation.

13. For which species (if any) would periodic closed seasons be acceptable?

Periodic closures should be on as few species as possible with Canvasback the most noted example. Two states did not support closure on any species.

14. Should further divisions within Flyways:

a. Be considered at this time as a means to address geographic differences in harvest derivation or other regional issues?

Six states agreed that further flyway divisions were acceptable to address geographical differences provided that there is supporting biological evidence. However, it was the opinion of some states that this would only polarize states and lead to more contentiousness. Again the CFC believes that an aggregate bag approach could be the method to address this issue.

Aggregate bag is the approach we want and develop if this works.

b. If so, where?

There was a wide range of comments and this needs to be discussed further to identify the best approach if differences within Flyways were to be implemented. Comments ranged from differences for Texas, at the state and/or zone level, difference among all states depending on harvest, and harvest and/or species distribution. CFC should be the determining factor with respect to flyway differences.

Pacific Flyway Council Comments on AHM Task Force Request March 16, 2004

The following comments were developed in response to a February 18, 2004 request by the AHM Task Force for input on the future direction of AHM. This request was based on issues presented at the AHM Conference in Denver on January 14, 2004, attended by the Pacific Flyway Study Committee and several Pacific Flyway Council members. As presented in the following timeline for decisions outlined by the Task Force, these comments are intended as a starting point for further discussion on these issues.

Timeline

- March: Flyway Councils provide feedback to Task Force
- April: Task Force distributes a framework of options/considerations for flyways for consideration at summer meetings
- July: Flyways meet to discuss framework of options
- August: Task Force submits report with narrower set of alternatives to IAFWA meeting
- Fall: AHM Working Group meets, provides technical feedback on alternatives to flyways and U.S. Fish and Wildlife Service
- January 2005: Task Force recommends preferred alternatives to waterfowl management community
- Feb/Mar. 2005: Flyways review and act on Task Force recommendations

1. Should AHM:

- Explicitly recognize NAWMP goals in the development of regulatory strategies?
- If so, to what degree should hunting opportunity be constrained by the NAWMP goals?
- And, how should we account for situations when uncontrollable environmental conditions are not average?

The Pacific Flyway Council believes that the NAWMP goal should be linked to regulatory strategies in AHM for mid-continent mallards. For consistency and program integrity, waterfowl population and habitat management programs need to be linked in some fashion to be most effective. This is seen as an important marketing and communication issue to avoid criticism that harvest and habitat management are not operating in a coordinated fashion to achieve mutual goals and objectives.

As originally implemented, AHM uses the NAWMP goal for mallards as part of the objective function. The NAWMP goal is the average population estimate during the 1970s when habitat conditions were above average. The objective function serves as an explicit “yardstick” against which to measure the performance of the various regulatory policies, and in simple terms reduces the value of harvest when the population is below the NAWMP goal. Computer simulations suggest that removal of the NAWMP goal from the AHM process would significantly increase the probability of “liberal” seasons being the optimal regulatory choice. Additionally, the use of the NAWMP goal in AHM could unnecessarily restrict mallard harvest opportunity when habitat conditions on the breeding grounds would prohibit population growth with or without restrictive harvest regulations.

The Council further believes that some accommodation should be built into the current AHM system removing or substantially lessening the impact of the NAWMP goal on harvest management decisions when current habitat conditions are such that there is not a reasonable biological expectation that alteration in harvest will impact attainment of the NAWMP goal. The Council does not believe that this adjustment should involve the goals themselves but should be addressed through alteration of the objective function within the AHM process in a way that does not discount the value of harvest when population growth is not biologically feasible. The Council does not envision annual adjustments to the NAWMP goals as a desirable approach, but does believe addressing the biological potential for harvest management to help attain population goals within the AHM process as both desirable and feasible.

2. If not:
 - How would we communicate the apparent disconnect between the two principal programs for waterfowl management?
 - How would we ensure that general duck hunting regs based on mallards are not overly liberal for some duck species or stocks?

Not Applicable.

3. What are the minimum season lengths, bag limits, and framework dates needed to ensure that states retain an interest in establishing open hunting seasons?

At this point in time, the Pacific Flyway Council constrains our response to only the “closed” season cells in the current decision matrix.

The Pacific Flyway Council voted last year to eliminate the Very Restrictive package, and set the closed season level at 5.5 million. Instead of a closed season, we support development of an option to avoid loss of support for habitat programs. This season alternative would provide assurance that some limited season would be offered, even at populations below 5.5 million. The season would have a harvest rate that is biologically supportable at low population levels, to be mutually developed by all flyway councils and USFWS if populations fall below 5.5 million. Completion of the Western mallard model and an AHM approach to pintail harvest management would be valuable in defining what minimum opportunities would be biologically feasible.

4. Are current flyway differences in regulatory alternatives acceptable?

At the 2000 Joint Flyway meeting in Memphis, all flyways agreed to maintain traditional flyway differences in harvest (Joint Recommendation #1). Current regulatory alternatives appear to have skewed harvest distribution away from traditional flyway proportions. Therefore, we believe that current flyway differences in regulatory alternatives should be restored to satisfy the intent of the joint flyway resolution.

5. Are less complex regulations (e.g. fewer species restrictions within the total bag limit) desirable?

Less complex regulations are desirable when possible, but need to be weighed against losses in overall hunting opportunity (e.g. season days or bag limits). Species restrictions within the total bag limit are the preferred option for limiting harvest of less numerous species, while maintaining mallard harvest opportunity. Past work by Ringleman on hunter preferences indicated that most hunters are unwilling to accept an overall smaller bag limit for fewer species restrictions, and most did not feel that complexity of regulation influenced their decision to hunt.

6. Which is more preferred: infrequent but large changes in annual regulations or more frequent but smaller changes in annual regulations?

Infrequent but large changes in annual regulations are less responsive to population trends, and result in less hunting opportunity than more frequent but smaller changes in annual regulations. An advantage of more alternatives is that incremental changes in seasons are likely to be smaller than with fewer alternatives (i.e. the “light switch” effect is reduced). Attempts to stabilize regulations in one alternative should be weighed against losses in hunting opportunity (e.g. season days or bag limits). Based on past experience, hunters may not accept long periods of stable regulations in light of varying population trends. Even with stable, liberal regulations, duck stamp sales have declined 5% in the Pacific Flyway since 1999.

7. Would aggregate bag limits (e.g. one hen mallard or one pintail) be an acceptable means to reduce harvest pressure on particular ducks?

The Pacific Flyway Council does not support the use of the aggregate bag limits at this point in time.

As noted elsewhere, the Council supports independent harvest strategies for pintails, scaup, and canvasbacks. In order of preference for regulatory strategies, Council favors independent bag limits, with independent season lengths and closed seasons as last resorts. To maintain allowable opportunity on mallards, independent harvest strategies for other species should be developed, including AHM models for pintails. Currently, interim independent harvest strategies for pintails and canvasbacks do not have concurrence among flyways and USFWS.

We appreciate the idea suggested by the Central Flyway to deal with species other than mallards by creating an aggregate daily bag limit of one pintail, scaup, canvasback, or hen mallard, which in combination with a reduction in the general duck bag limit, was hypothesized as a way to reduce the likelihood of independent season lengths for pintails and canvasbacks.

We believe this proposal would lead to unnecessary reduction in harvest opportunity particularly for mallards, with unknown effects on independent season lengths of pintails and canvasbacks. Until independent harvest strategies are developed and accepted by flyways, aggregate bag limits may or may not significantly reduce the likelihood of independent season lengths for these species.

Until 1985, hen mallards were part of the general duck bag limit in the Pacific Flyway. The hen restrictions were added in AHM negotiations with other flyways in 1994, without biological rationale. Species and sex restrictions add regulation complexity, and reducing the limit from 2 to 1 (aggregate) would add more complexity with no biological justification. Furthermore, we can foresee situations where with improvements to some duck stocks within the aggregate bag (but not sufficient improvement to warrant removal) may result in reduced hunting opportunity. As noted elsewhere, there is unmeasured variation in the “thresholds” most states in the Pacific Flyway will “sacrifice” complexity for opportunity.

8. Would states be willing to give up days in the liberal alternative to foster annual stability in regulations, and to help ensure that there are no closures or partial season closures on some species?

Council is unable to provide a definitive answer to this question as the intent of the question seems to be confounded by 2 different issues. On one hand, Council understands the question to imply that a reduction in the season length under the Liberal alternative, presumably coupled with the removal of the moderate package as suggested in Colorado, could increase the frequency of years in the “Liberal” duck season alternative, or more years with seasons of the same length and bag limit.

However, it is not clear how reductions only in the Liberal alternative would “ensure” a reduction in the frequency of closures on “some species” (presumably canvasback and pintails), given currently established processes for setting the thresholds for closed seasons. In the case of pintail, the current strategy sets a closure at 1,500,000 breeding pintails and a predicted fall flight of <2,000,000. Given our understanding of the role of harvest dynamics in pintail population ecology, it seems unlikely that further reductions in harvest are likely to effect the population size and hence the likelihood of a closed season. As of this writing, there are no agreements on partial seasons for pintail.

Regarding canvasback, there seems to be general agreement and support for partial seasons for this species in all four flyways. In our case, Council is not overly concerned about the limited increase in complexity due to partial seasons for this species.

It is hard to imagine how anything but a substantial decrease in season length in the Liberal package, with the implementation of these independent strategies, how a “guarantee” can be made that reducing the opportunity provided in the Liberal alternative would necessarily result in annual stability in regulations. While there is unmeasured variation in the “thresholds” most states in the Pacific Flyway will “sacrifice” complexity for opportunity.

9. How often should the regulatory alternatives be reviewed and what should be the criteria for modifying them?

Although the Council has generally supported the numerous changes to the regulatory alternatives since the implementation of AHM, we now believe that such modifications should be made no more often than every 5 years. We advocate the development of criteria and a schedule where changes could be made, and similar to the schedule for changing zone boundaries and split season options, opportunities for changing alternatives would be

announced during the year prior to revisions. Revisions would require concurrence by all flyways for implementation. Criteria could include such factors as significant changes in the distribution of harvest, increased knowledge of hunter preferences, etc.

10. Should we:

- Continue to base the choice of regulatory alternatives on the status of mallards?
- If so, how should we account for those stocks with lower harvest potential?
- Or, would one of the other alternatives described by the “AHM Working Group” be more appropriate?

Based on our review last year of the report on “Population Dynamics of Ducks Other Than Mallards in Mid-continent North America”, it does not appear that allowing mallards to drive duck harvest management will significantly impact attainment of NAWMP goals for most other species. Where mallard harvest management can be shown to negatively impact trends of other species, the Council favors independent harvest strategies for those species. Last year, Council reviewed the USFWS paper, “The Problem of Scale in AHM: Alternatives for Recognizing Stock-Specific Variation in Harvest Potential” and viewed the alternatives therein as too complex for effective implementation in regulating Pacific Flyway duck harvest. In addition, existing population, survival, and recruitment data are for most duck species are not comparable to those available for mallards, and should not be used to constrain mallard harvest potential. We would prefer refinement of the existing system compared to the alternatives presented. However, the alternatives serve as points for further discussion on a topic that has been debated for many years. We continue to support the inclusion of western mallard models in alternatives developed.

11. Regardless of the general approach, for which species would separate hunting regulations (including species-specific season lengths, bag limits, and framework dates) be acceptable?

As noted by Council in 2003, in regard to questions raised in the “multi-stock” paper, from our perspective it appears that independent harvest strategies (e.g., hunting regulations different from those for mallards based on AHM) are likely warranted for pintails, scaup, and canvasbacks. Independent species harvest strategies should focus on independent bag limits, and independent season lengths and closed seasons as last resorts. Objective (and hopefully standardized) criteria need to be developed to determine which species warrant separate harvest strategies.

12. If the length of the general duck season was based on a single species like mallards, for which species would bag limits that varied annually be acceptable?

This question largely encompasses the same concepts as question 11 above. The Council has previously gone on record as recognizing bag limits as a first step (followed by independent season lengths and finally species-specific closures) in regulating harvest for species other than mallards that are shown to require reductions in harvest mortality. Accordingly, annually varying daily bag limits would be acceptable by the Council in

principal, but we doubt that sufficient information exists to justify small adjustments on an annual scale.

13. For which species would periodic closed seasons be acceptable?

Interim strategies for Northern Pintails and Canvasback include closed seasons. The Council recommends that flyways and USFWS begin a dialogue on developing criteria for other species, including consistent management thresholds.

14. Should further divisions within flyways:

- Be considered at this time as a means to address geographic differences in harvest derivation or other regional issues?
- If so, where?

The Council reiterates its support for the Flyway system in managing waterfowl harvest, and for the High Plains and Columbia Basin mallard management units. In addition, further consideration for duck harvest regulations at smaller scales than flyways should be investigated as a potential tool to allow for improved duck hunting regulations. We recognize the significant analytic challenges and public policy issues related to smaller scale management, but see potential for increased hunter satisfaction and opportunity in areas within the Pacific Flyway with disparate duck populations in terms of species composition and abundance. We support investigating whether a limited set of state-specific regulatory options (with equivalent projected harvest rates) could be developed to address regional hunter preferences.